

CLAIMS

What is claimed is:

1. A disk clamp of a hard disk drive to affix a magnetic disk that stores data to a spindle motor of the hard disk drive, the disk clamp comprising:
a pressing portion formed along an outer circumference of the disk clamp at an edge portion, to press an upper surface of the disk in a vertical direction;
a stress distribution portion formed inside the pressing portion and having a profile with a curved shape bulged upward to distribute stress applied to the disk; and
a plurality of screw coupling holes into which screws are inserted to be coupled to an upper end portion of the spindle motor and provided at a predetermined distance in a circumferential direction inside the stress distribution portion.
2. The disk clamp as claimed in claim 1, wherein the pressing portion has a profile having a curved shape bulged downward.
3. The disk clamp as claimed in claim 2, wherein a radius of the curved shape of the stress distribution portion is greater than or equal to a radius of the curved shape of the pressing portion.
4. The disk clamp as claimed in claim 2, wherein the pressing portion is continuously formed at the stress distribution portion.
5. The disk clamp as claimed in claim 1, wherein the disk clamp has a same thickness throughout an entire portion of the disk clamp.
6. The disk clamp as claimed in claim 1, wherein the disk clamp has a dome shape with a center portion bulged upward as a whole and, when the disk clamp is coupled to the spindle motor by the screws, the disk clamp is flattened as a whole.
7. The disk clamp as claimed in claim 1, wherein the disk clamp is manufactured by press processing a metal material having a predetermined elasticity.
8. A disk clamp of a hard disk drive, the disk clamp comprising:

a substantially S-shaped edge portion to press an upper surface of a disk in a vertical direction and distribute stress applied to the disk; and

an inner portion having a plurality of apertures circumferentially arranged at predetermined distances inside the substantially S-shaped edge portion.

9. A disk clamp of a hard disk drive, the disk clamp comprising:
a substantially wave-shaped edge portion to press an upper surface of a disk in a vertical direction and distribute stress applied to the disk; and
an inner portion having a plurality of apertures circumferentially arranged at predetermined distances inside the substantially wave-shaped edge portion.

10. The hard disk drive disk clamp of claim 9, wherein the inner portion of the disk clamp is coupled by screws via the apertures to an upper end portion of a spindle motor of the hard disk drive.

11. The disk clamp as claimed in claim 9, wherein an outer portion of the substantially wave-shaped edge portion is a pressing portion with a profile having a substantially curved shape with at least one bulge downward.

12. The disk clamp as claimed in claim 11, wherein an inner portion of the substantially wave-shaped edge portion is a stress distribution portion with a profile having a substantially curved shape with at least one bulge upward.

13. The disk clamp as claimed in claim 12, wherein a radius of the substantially curved shape of the stress distribution portion is greater than or equal to a radius of the substantially curved shape of the pressing portion.

14. The disk clamp as claimed in claim 12, wherein the pressing portion is continuously formed at the stress distribution portion.

15. The disk clamp as claimed in claim 9, wherein the disk clamp has a same thickness throughout an entire portion of the disk clamp.

16. The disk clamp as claimed in claim 9, wherein the disk clamp has a dome shape with a center portion bulged upward as a whole and, when the disk clamp is coupled to a spindle motor by screws, the disk clamp is flattened as a whole.

17. The disk clamp as claimed in claim 9, wherein the disk clamp is manufactured by press processing a metal material having a predetermined elasticity.

18. A disk clamp of a hard disk drive to affix a magnetic disk that stores data to a spindle motor of the hard disk drive, the disk clamp comprising:

a pressing portion formed along an outer circumference of the disk clamp at an edge portion, to press an upper surface of the disk in a vertical direction;

a stress distribution portion formed inside the pressing portion and having a profile with a curved shape bulged upward to form a dome portion to distribute stress applied to the disk, and having a plurality of screw coupling holes into which screws are inserted to couple the disk clamp to an upper end portion of a spindle motor, the screw coupling holes being provided at a predetermined distance in a circumferential direction inside the stress distribution portion,

wherein, when the disk clamp is coupled to the spindle motor by the screws, the disk clamp is flattened as a whole.